of the International Zoological Congress, we have here the difficulty in applying Mendelism that the range of variation of the recessive character (extra veins) includes, in its somatic manifestation, the lominant characteristic, so that when the recessive character is not well developed we get, even in strains supposedly "pure" with respect to the recessive character, flies that somatically lack the extra veins. However, the degree of development of these extra veins is inherited and the study of such inheritance is a typical one of blending inheritance. Since the degree of development of the abnormality is inherited there must be a correlation between the potency of the "determiners" in the germs and the soma from which these germs came, also between them and the soma they produce. Flies having slight abnormalities produce germs tending to have the abnormality-producing factor weak. When such flies are mated with flies which lack the factor the zygote is so weak with respect to the factor that few, if any, of the offspring are abnormal. However, if flies, producing germs strong with respect to the factor, are mated with flies lacking it, abnormals will be produced. In other words, we have imperfect dominance. This theory of imperfect dominance possesses the advantage, from the Mendelian's view-point, that one does not have to give up a fundamental principle of Mendelism—segregation or purity of the germ. An explanation of certain cases of latency, such as the carrying of pigment possibilities in white animals where albinism is recessive, is also suggested. For example, the spotted condition of guinea-pigs varies in a negative direction until pigment is to be found only in the eyes or in a very small part of the skin,[2] hence presumably beyond this point, when, although it is germinally present it is not somatically evident.

In other words, when the ranges of variation of Mendelian pairs overlap, the Mendelian phenomena will be masked, owing to the inability of the experimenter to properly classify his material. Nevertheless, the fundamental principle of Mendelism—segregation—may still be operative. For example, Castle[3] concluded that the inheritance of polydactylism was *neither* alternative nor blending. May it not be *both* alternative and blending? The distinction seems theoretically important.

FRANK E. LUTZ

[2] Castle, 1905, Carnegie Pub., No. 23.

[3] 1906, Carnegie Pub., No. 49.

DISTRIBUTION OF DIABASE IN MASSACHUSETTS

No diabase is found west of the Triassic. In the Triassic and east to a line N. 10° E. through the Brookfields is a "Hunne diabase" with two pyroxenes—an augite and a white diopside and feldspars in two generations.

Next east a series of large dykes runs N. 20° E. through Spencer nearly across the state, of a micrographic Hunne diabase, *i. e.*, a rock closely like the above, but containing often abundantly quartz and orthoclase intergrown.

The two types repeat the relations of the western bedded diabase and the Palisade diabase in New Jersey, as recently brought out by Mr. T. Volney Lewis, at the winter meeting of the New York Academy of Sciences. Next east in Massachusetts a band of olivine diabase runs north from Blackstone half across the state.

All the remaining eastern part of the state east of a line drawn about N. 10° W. from the northeast corner of Rhode Island is occupied by a normal diabase, with augite and feldspar in one generation, no olivine or micrographic structure, rich in iron, often showing long rows of octahedra; much weathered and running to coarser grain, and in part of pretriassic age.

Again, in addition to the nepheline rocks around Salem, an interrupted band runs N. 10° W. from Woonsocket, near the northeast corner of Rhode Island, across Massachusetts and into New Hampshire, and the olivine diabase mentioned seems to be in relation with the same. These rough notes are presented as a preface to a request that any one having slides of diabase from Massachusetts would kindly send to the writer information as to whether the same contains olivine, diopside, micrographic or porphyritic structure.

The writer would also value information about any nepheline rocks in Massachusetts.

B. K. EMERSON

AMHERST, MASS.

A SIMPLE ATMOMETER

FOR determining the differences between the evaporating power of the air in different localities, as in the case of studies dealing with the relation of meteorological conditions to plant growth, the atmometer here described has proved very satisfactory. This instrument utilizes a porous clay bougie for the evaporating surface, after the manner of an atmometer devised by Babinet and described in 1848.[1] It is a modification of a form independently devised by the author for physiological purposes, and described in Publication No. 50 of the Carnegie Institution, 1906.

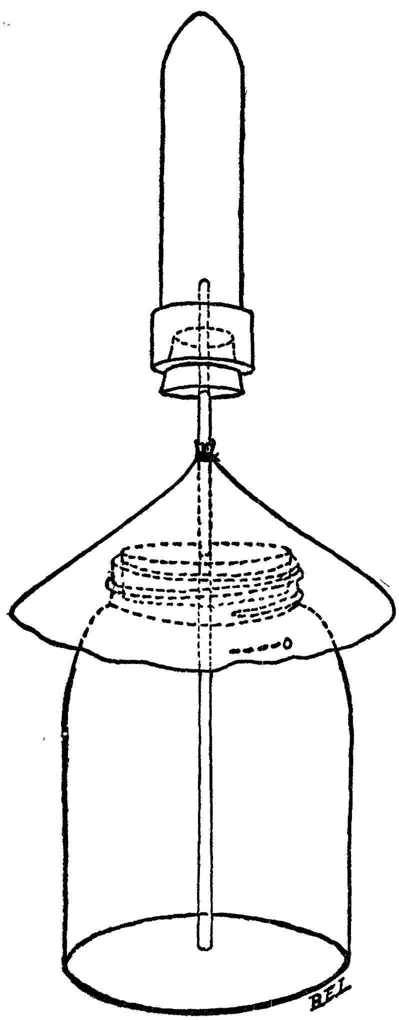

FIG. 1. Porous Cup Atmometer

The bougie is about 13 cm. long and 2.5 cm. in diameter, closed and rounded at one end and reinforced at the other by a thickened rim. The wall, of unglazed porcelain similar to that used for filter tubes, is about 4 mm. in thickness. The open end is closed by a perforated rubber stopper bearing a glass tube about 30 cm. in length, which extends through a cork stopper nearly to the bottom of a glass jar of the "Mason" pattern. Any bottle will serve as well, and a graduated flask serves better, but the "Mason" jar was adopted because of the ease with which it may be obtained almost anywhere in the United States. To allow access of air to the jar, the cork stopper should fit the latter somewhat imperfectly, or should have a slight groove cut in its margin. Above the jar the tube passes through a conical cap of cloth which is rendered water-proof by means of shellac. This serves to shed rain water and to prevent its direct entrance to the jar. An external file-mark on the jar, near the shoulder (*O* in the figure), serves as a fixed water-level. A pint, quart or half-gallon jar is used, according to the evaporation rate and the time period during which the instrument is to operate without refilling.

In setting up this instrument, the jar is partially filled with distilled water, the bougie (which has been soaked in distilled water to remove air) is filled and its stopper inserted with the glass tube, the tube is filled, and its free end quickly thrust to the bottom of the jar. In the last operation air must not enter the tube. The jar is next filled to the file-mark, the cork stopper placed in position, and the instrument is ready for operation. When the apparatus is thus arranged, the water films closing the pores at the outer surface of the bougie possess a tensile strength adequate

[1] Babinet, J., *Compt. Rend.*, **27**: 529–30, 1848.